**2021 NYCU OS HW3 report**

|  |  |
| --- | --- |
| Question | Answer |
| Q1.  Briefly describe your design for the sorting algorithm, merge function, the thread management.  Also, describing the number of sort threads and number of merge threads in the Multi-thread program. | 我的方法就像是在用merge sort，但是多了一個數字cut來記說已經切了多少次，由於每次都是切成兩塊，因此最後會切出2^cut塊，在每塊做了bubble sort後，再兩塊兩塊merge直到剩下一塊。MT的部份在切出2^cut塊後，會分配給每一塊一個thread 做bubble sort，再分配給每兩塊一個thread去做merge直到剩下一塊。 |
| Q2.  Show the fastest time acceleration between single-thread and multi-thread. (Take screenshots of the time between single-thread and multi-thread) |  |
| Q3.  You need a brief description of the best  multi-threads and worst multi-threads methods.  The content includes the number of threads used and the way of partitioning, comparing the difference in time, and taking the screenshot between two multi-thread results. | Best multi-threads 是切成8塊而 worst multi-threads 是切成2塊 |
| Q4.  What did you learn from doing hw3? | sub array切得越多或是array本身不長，mt的優勢反而顯現不出來，因為這時sorting時間本來就不長，而mt還要另外花時間開thread，就會造成st比mt快的情況。 |